

IN THE CLAIMS:

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1. (Amended) A system for providing high frequency data communications in a satellite-based communications network, the system comprising:
a plurality of communications satellites each having uplink and downlink antennas capable of receiving and transmitting a plurality of signals, each of said satellites having a communication control circuit;

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at least one of said satellites being a reconfigurable satellite having, a programmable frequency synthesizer coupled to a communications control circuit;

a routing table storing tuning information therein;

a controller located on said satellite coupled to said communications control circuit, said controller controlling a frequency reconfiguration of said communications control circuit through said programmable frequency synthesizer in response to said tuning information.

[Please cancel claim 9, without prejudice.]

A2
10. (Amended) A payload circuit as recited in claim ¹³15 wherein said communications control circuit comprises an up converter and a down converter.

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11. (Amended) A payload circuit as recited in claim ⁹15 wherein said communications control circuit comprises a transponder.

A3
12. (Amended) A payload circuit as recited in claim ⁹15 wherein said programmable frequency synthesizer is coupled to said up converter and said down converter.

[Please cancel claim 14, without prejudice.]

¹⁵15. (Amended)

A payload circuit for a satellite comprising:

a receive array;

a receive beam forming network;

a transmit array;

a transmit beam forming network;

a communications control circuit for controlling communications of satellite;

and

a reconfiguration circuit coupled to the communications control circuit for reconfiguring the communications control circuit, said reconfiguration circuit comprising a programmable frequency synthesizer, an on-board computer and a routing table having tuning information stored therein, said on-board computer controlling a reconfiguration of said communications control circuit through said programmable frequency synthesizer in response to said tuning information.

¹⁶16.

(Amended)

A payload circuit as recited in claim ¹⁵15 wherein said communications control circuit comprises a time division multiple access switch.

¹⁷17.

(Amended)

A payload circuit as recited in claim ¹⁵15 wherein said communications control circuit comprises a packet switch.

¹⁸18.

(Amended)

A method as recited in claim ¹⁶16 wherein the step of reconfiguring the payload comprises the step of changing an up converter frequency and down converter frequency.

²⁰20.

(New)

A method as recited in claim ¹⁶16 further comprising storing tuning information in a routing table.

²¹21.

(New)

A method as recited in claim ¹⁶16 wherein the step of reconfiguring the payload comprises changing the amplitude or phase coefficients of a beam in response to the tuning information in the routing table.

²²
24. (New) A method as recited in claim ¹⁶~~18~~ wherein moving the reconfigurable satellite is performed using east/west station keeping.

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25. (New) A method as recited in claim ¹⁶~~18~~ wherein moving the reconfigurable satellite is performed using north/south station keeping.

²⁴
26. (New) A method as recited in claim ¹⁶~~18~~ further comprising updating the routing table from an order wire.

²⁵
27. (New) A method as recited in claim ¹⁶~~18~~ further comprising updating the routing table from an RF control channel.

A6
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28. (New) A method of configuring a satellite comprising:
deploying a reconfigurable satellite;
storing tuning information in a routing table;
transmitting reconfiguration instructions to said satellite;
reconfiguring the payload of the reconfigurable satellite in response to the tuning information in the routing table.

²⁷
29. (New) A method as recited in claim ²⁶~~28~~ wherein the step of reconfiguring the payload comprises changing the amplitude or phase coefficients of a beam in response to the tuning information in the routing table.

²⁸
30. (New) A method as recited in claim ²⁶~~28~~ further comprising updating the routing table from an order wire.

²⁹
31. (New) A method as recited in claim ²⁸~~28~~ further comprising updating the routing table from an RF control channel.